UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/393,752	09/10/1999	RAM DANTU	135544	3240

24587 7590 03/18/2005

ALCATEL USA
INTELLECTUAL PROPERTY DEPARTMENT
3400 W. PLANO PARKWAY, MS LEGL2
PLANO, TX 75075

EXAMINER	
KHUONG, LEE T	

ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 03/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/393,752	Applicant(s) DANTU ET AL.	
	Examiner Lee Khuong	Art Unit 2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 January 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *40 and 42-48* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *40, 42-48* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The disclosure is objected to because of the following informalities: in page 2, lines 8-9, it is suggested that appropriate information is included.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 40, 46-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinbashi (US 5,805,568) in view of Ellis (US 6,256,292) and further in view of Doshi et al. (US 6,021,113) hereinafter is referred as Doshi.

Regarding claims 40 and 46-47, Shinbashi teaches of a label switched ("tag", col.2, lines 58-67) router for receiving packet flows and routing the packet flows through a fiber optic (col. 1, line 65 - col. 2, line 5) ring network (Fig. 1 and 9-11). Shinbashi teaches of a "routing tag assembling/disassembling unit 8e" for labeling cells according to a state of the system being of the "present operating system" or the "spare operating system" (i.e. working or switched; col. 6, lines 25-61), and a routing table ("switching map" 150, Fig. 4; col. 11, lines 3-19) that includes label switched working paths and label switched protection paths (col.16, lines 11-30). Also disclosed is a network interface unit (8, Fig. 2 and Fig. 3) that inserts a routing label on packet ("routing tag assembling/disassembling unit 8e", col. 16, lines 20-27) and converts the packets to a synchronous optical signal for transmission of the fiber optic ring network ("STS terminal unit 8f", col. 7, lines 52-58), and a network condition unit for receiving and storing a failure indication in the form of an OAM cell ("OAM cell assembling/disassembling unit 8g", col. 15, line 66 - col. 16, line 13). Shinbashi further teaches that in response to receiving the failure indication ("OAM cell", col. 15, lines 39- 50), a protection path switching (120, Fig. 4, col. 16, lines 6-13) unit for determining packets that are to be transmitted on working paths affected by the failure and re-labeling the packets for transmission on a label switched protection path in the fiber optic ring network (col. 3, lines 31-40; col. 16, lines 13-30). In other words, the routing tag assembling/disassembling units 8e of the present and spare (working and switched) and changes the value of the tags (labels) to the value previously used by the other unit upon detection of failure, thus switching from working to switched protection path.

Shinbashi fails to explicitly teach of the failure indication being contained in the overhead of a synchronous optical signal that indicates a failed link or congested traffic conditions from the fiber optic ring network.

Ellis teaches of a protection path switched technique for use in a fiber optic ring network ("Sonet" abstract; Fig. 3-5 and 13) that includes a failure indication in the overhead of the synchronous optical signal ("K1 and K2 bytes", col. 1, lines 39-47).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to transmit the failure indication in the overhead of the synchronous optical signal of Shinbashi.

One of ordinary skill in the art would have been motivated to do this because AIS signals commonly used in the LOH of SONET systems could easily be exchanged for the AIS signal transmitted in the OAM cell of Shinbashi (col. 8, lines 32-40) by making use of the STS terminal unit 8f of Shinbashi that converts ATM cells into signals for transmission on a SONET network (col. 4, lines 60-67; col. 7, lines 51-58).

Doshi teaches the failure indication that indicates a congested traffic conditions from the fiber optic ring network (step 256, Fig. 13B, col. 26 line 27 – col. 27, line 25)

At the time of the invention, it would have been obvious to one of ordinary skill in the art to transmit the failure indication that indicates a congested traffic conditions from the fiber optic ring network of Doshi into the failure indication in the overhead of the synchronous optical signal of Ellis.

One of ordinary skill in the art would have been motivated to do this to provide efficient use of the spare link (col. 7, lines 12-34).

Regarding claim 48, Shinbashi teaches of a label switched ("tag", col.2, lines 58-67) router for receiving packet flows and routing the packet flows through a fiber optic (col. 1, line 65 - col. 2, line 5) ring network (Fig. 1 and 9-11). Shinbashi teaches of a "routing tag assembling/disassembling unit 8e" for labeling cells according to a state of the system being of the "present operating system" or the "spare operating system" (i.e. working or switched; col. 6, lines 25-61); network condition unit periodically ("time division multiplexing", col. 5, lines 53-62) determining if a failure has occurred in adjacent link to the label switched router in a failure indication in the form of an OAM cell ("OAM cell assembling/disassembling unit 8g", col. 15, line 66 - col. 16, line 13). Also disclosed is a network interface unit (8, Fig. 2 and Fig. 3) that inserts a routing label on received packet ("routing tag assembling/disassembling unit 8e", col. 16, lines 20-27), converts the packets to a synchronous optical signal for transmission of the fiber optic ring network ("STS terminal unit 8f", col. 7, lines 52-58). Shinbashi further teaches that in response to receiving the failure indication ("OAM cell", col. 15, lines 39- 50), a protection path switching (120, Fig. 4, col. 16, lines 6-13) unit for determining packets that are to be transmitted on working paths affected by the failure and re-labeling the packets for transmission on a label switched protection path in the fiber optic ring network (col. 3, lines 31-40; col. 16, lines 13-30). In other words, the routing tag assembling/disassembling units 8e of the present and spare (working and switched) and changes the value of the tags (labels) to the value previously used by the other unit upon detection of failure, thus switching from working to switched protection path.

Shinbashi fails to explicitly teach of the failure indication being contained in the overhead of a synchronous optical signal that indicates a failed link or congested traffic conditions from the fiber optic ring network.

Ellis teaches of a protection path switched technique for use in a fiber optic ring network ("Sonet" abstract; Fig. 3-5 and 13) that includes a failure indication in the overhead of the synchronous optical signal ("K1 and K2 bytes", col. 1, lines 39-47).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to transmit the failure indication in the overhead of the synchronous optical signal of Shinbashi.

One of ordinary skill in the art would have been motivated to do this because AIS signals commonly used in the LOH of SONET systems could easily be exchanged for the AIS signal transmitted in the OAM cell of Shinbashi (col. 8, lines 32-40) by making use of the STS terminal unit 8f of Shinbashi that converts ATM cells into signals for transmission on a SONET network (col. 4, lines 60-67; col. 7, lines 51-58).

Doshi teaches the failure indicates a congested traffic conditions from the fiber optic ring network (step 256, Fig. 13B, col. 26 line 27 – col. 27, line 25)

At the time of the invention, it would have been obvious to one of ordinary skill in the art to transmit the failure indicates a congested traffic conditions from the fiber optic ring network of Doshi into the failure indication in the overhead of the synchronous optical signal of Ellis.

One of ordinary skill in the art would have been motivated to do this to provide efficient use of the spare link (col. 7, lines 12-34).

4. Claims 42-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinbashi in view of Ellis and further in view of Doshi, and further in view of Chaudhuri (US 6,324,162).

Regarding claim 42, Ellis further teaches of a fiber optic ring being a SONET network and the overhead failure signals being included in the K1 and K2 bytes of the overhead "Sonet" abstract; Fig. 3-5 and 13; "K1 and K2 bytes", col. 1, lines 39-47).

At the time of the invention it would have been obvious to one of ordinary skill in the art to transmit the failure signals of Shinbashi ("OAM cells") in the K1 and K2 bytes of the overhead because it is standard to use the K1 and K2 bytes (or SOH, signal overhead) in a SONET frame to transmit management and control information, including failure indication. The system of Shinbashi using a SONET communication system where ATM cells are converted to a format compatible with transmission over the fiber optic network (STS; col. 13, line 63 - col. 14, line 2), could easily utilize the STS terminal unit 8f to include any failure indication signals (OAM cells) in the K1 and K2 bytes of the SONET frame generated.

One of ordinary skill in the art would have been motivated to do this so that information regarding failures in the network can be disseminated throughout the network, to network elements.

Regarding claim 43, Ellis further teaches of a SDH (synchronous digital hierarchy) network being basis for the SONET standard (col. 1, lines 15-17). As is known in the art, SONET standard is the North American equivalent to the SDH standard used in Europe.

At the time of the invention it would have been obvious to one of ordinary skill in the art to implement in the invention of Shinbashi in an SDH network, and to include the failure indication in the SDH overhead.

One of ordinary skill in the art would have been motivated to do this so that the network fault restoration technique could be transferable to European synchronous communications over optical fibers, and so that information regarding network failures can be communicated through the network via the overhead to be extracted and analyzed by network elements, rather then via the payload of a synchronous optical signal.

5. Claims 44-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinbashi in view of Ellis and further in view of Doshi, and further in view of Bentall et al. (US 6,282,170) hereinafter is referred as Bentall.

Regarding claims 44 and 45, as discussed with the rejection of claim 40 above, Shinbashi and Ellis both teach of networks transmitting ATM cells (see both abstracts).

Shinbashi and Ellis fail to explicitly teach of including a quality of service rating in the routing label.

Bentall teaches of a path restoration technique (abstract) in a network transmitting ATM cells where the network is a SONET network (col. 6, lines 35-37). Bentall further teaches of utilizing quality of service in the restoration process, by assigning quality of service parameters to paths and routing traffic based on service QOS of individual cells (col. 1, lines 14-19; col. 17, line 65 - col. 18, line 5). In ATM systems the QOS of each cell is inspected to carry out routing; therefore, prioritization based on quality of service will be carried out on a packet by packet basis. QOS ratings are commonly used in ATM systems, such as the system disclosed by Shinbashi.

At the time of the invention it would have been obvious to one of ordinary skill in the art for the ATM cell assembling unit 8b of Shinbashi to include a QOS rating with the cell so information may be carried throughout the network consisting of different service classes.

One of ordinary skill in the art would have been motivated to do this so that higher priority data streams could be assured greater level of service, even in the event of system failures.

Response to Arguments

6. Applicant's arguments with respect to claims 40-48 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

De Boer et al. (US 6,400,859), is cited to show a System And Method For Packet Level Restoration Of IP Traffic Using Overhead Signaling In A Fiber Optic Ring Network.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Khuong whose telephone number is 571-272-3157. The examiner can normally be reached on 9AM - 5PM.

9. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on 571-272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lee T. Khuong
Examiner
Art Unit 2665

ALPUS H. HSU
PRIMARY EXAMINER